

BENOX A-70, A-75, A-80

Dibenzoyl Peroxide Water Wet Granules

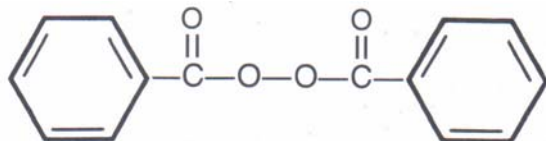
DESCRIPTION

Benox A-70, A-75, A-80 are free flowing, water-wet granular forms of dibenzoyl peroxide. In this form, these products are less flammable and shock sensitive than granular formulas containing little or no water. These Benox dibenzoyl peroxide products can be used as polymerization initiators for vinyl monomers and unsaturated polyester resins when the presence of water is not detrimental.

TYPICAL PROPERTIES

	Benox A-70	Benox A-75	Benox A-80
Dibenzoyl Peroxide	67-70 %	74-77%	77-80%
Water	30-33 %	23-26 %	20-23 %
Assay	99 %	99 %	99 %
Active Oxygen (wet basis)	4.4-4.6 %	4.9-5.1 %	5.1-5.3 %
Form	← Fine, free-flowing granules →		
Color	← White →		
Iron, dry basis, max	10 ppm	10 ppm	10 ppm
Total Chloride (as NaCl), dry basis, max	1500 ppm	1500 ppm	1500 ppm
Organic Chloride (as BzCl), dry basis, max	1100 ppm	1100 ppm	1100 ppm
Hydrogen Chloride, dry basis	0.04 %	0.04 %	0.04 %
Benzoic Acid, dry basis	0.30 %	0.30 %	0.25 %
Soluble in	Organic Solvents (water compatibility varies with solvent concentration)		
Insoluble in	← Water →		

CHEMICAL STRUCTURE



Molecular Weight 242.2
Empirical Formula – C₁₄H₁₀O₄

THERMAL DECOMPOSITION DATA (Half-life in benzene):

Temperature (°C)	60	70	80	90	100	110
Hours	43	13	4	1	0.4	0.1

Half-life data is generated by using 0.2 moles/liter of the specific peroxide dissolved in a solvent, generally benzene. The half-life of this highly diluted peroxide is the time required for decomposition of one-half of the peroxide. The rate of decomposition is directly related to the rate of generation of free radicals, and this half-life data can provide guidance in the selection of the optimum peroxide for a given application. This half-life data is specific to the solvent used and applies to thermal decomposition rather than activated decomposition.

APPLICATIONS

Benox A-70, A-75, A-80 products can be used as free radical polymerization initiators and cross-linking agents in a wide variety of applications. The water wet dibenzoyl peroxide dissolves more rapidly than the dry form of the product. The water separates and settles to the bottom where it can be withdrawn if desired.

Benox A-70, A-75, A-80 are effective initiators in the polymerization and co-polymerization of numerous vinyl monomers which include styrene, methyl methacrylate, acrylic esters, acrylonitrile, vinyl acetate, vinyl chloride, and ethylene. Typical use levels are 0.1% to 2.0% in bulk, solution, emulsion and suspension polymerizations that operate at temperatures from 180°F/82°C to 300°F/149°C.

Dibenzoyl peroxide is also used in chemical reactions that produce styrenated and methacrylated alkyd resins and other epoxy resin esters. Other uses include drying agents for printing inks, bleaching agents, pharmaceutical preparations, organic chemical synthesis, and vulcanization of natural and synthetic rubbers.

One of the more frequent uses of dibenzoyl peroxide is for the free radical initiated polymerization and cross-linking of vinyl monomer unsaturated polyester resin systems. Generally, the granular dibenzoyl peroxide is dispersed in the vinyl monomer before addition to the monomer/resin system. Dibenzoyl peroxide may be used as an elevated temperature cure initiator or ambient temperature cure initiator after addition of an amine accelerator (e.g. dimethylaniline) to the resin system. Use levels of peroxide initiator are from 0.75% to 2.0% (dry weight basis) on the weight of resin.

CAUTION: NEVER MIX PROMOTERS AND PEROXIDES DIRECTLY TOGETHER. RAPID DECOMPOSITION RESULTING IN FIRE AND/OR EXPLOSION WILL OCCUR!

Benox A-70, A-75, A-80 products are excellent ambient temperature initiators when used in “two-pot” spray systems for unsaturated polyester resins. The accelerator is mixed with the resin in one side while the peroxide initiator is added to the second side. The two sides are then combined through a mixed chamber in the spray gun immediately prior to spraying.

SPECIAL NOTE

Users of Benox A-70, A-75, or A-80 should be aware that after packaging, the water in the product would migrate to the bottom of the package. As a result, the assay of dibenzoyl peroxide will vary from the top to the bottom of the package. Therefore, if less than a package of Benox A-70, A-75, or A-80 is to be used, the material should be well mixed before removing the required amount of the product.

Dibenzoyl Peroxide Granular Products

STORAGE

- Storage at 80°F or below is recommended.
- Store in original containers **away** from flammables and all sources of heat, sparks, or flames; out of direct sunlight; and **away** from **cobalt naphthenate**, other promoters, accelerators, oxidizing or reducing agents and strong acids or bases.
- **Damaged containers** – Remove and isolate in a safe area. Re-package or dispose immediately (see **spills**).
- **Never** store in refrigerators containing food and/or beverages.
- Consult National Fire Protection Association (NFPA) Code 432 and/or local regulatory agencies.
- Rotate stock, use oldest date first.

HANDLING

- Inform all personnel of procedures for safe handling and review MSDS with them.
- Remove from storage area only the amount needed for one shift.
- Wear safety glasses or goggles and chemical resistant gloves.
- Keep away from heat, flames, and sparks.
- **Never** add peroxides directly to promoters or vice-versa, vigorous to violent decomposition can occur.

FIRST AID

- EYES – Flush immediately with large amounts of fresh water and continue washing for at least 15 minutes. **Medical attention is needed.**
- SKIN – Wash with soap and water.
- INGESTION – Administer large amounts of milk or water and call a physician immediately. Do not induce vomiting. As an aid to the physician, suggest calling your local Poison Control Center.

SPILLS

- Clean up immediately by absorbing with inert absorbent material. Moisten and sweep up using non-sparking tools and put in a clean plastic bag inside a plastic pail.
- Dispose of immediately in accordance with local, state, and federal regulations.
NOTE: Spilled peroxides, if not immediately cleaned up, can dry out and decompose or burn in a hazardous, violent manner.

FIRE

- When dry, Dibenzoyl Peroxide products ignite readily and burn vigorously.
- Use water from a safe distance – preferably with a water-fog nozzle.
- For very small fires, an extinguisher with carbon dioxide, foam, or dry chemical may be effective.
- In case of fire in or near a storage area, cool stored containers with water spray.

PACKAGING, SHIPPING & AVAILABILITY

- The standard package sizes of Benox Granular Products are 1 x 25 lb. or 1 x 12 kg (dry weight) polyethylene bag inside a fiberboard container. For custom package sizes, please contact your local distributor or Syrgis Performance Initiators, Inc.
- Classification – Please refer to the specific Benox Material Safety Data Sheet under section 14, Shipping Description.
- Benox Granular Products are available through a nation-wide distributor network. Call Syrgis Performance Initiators, Inc. for the name of the distributor in your area.
NOTE: MSDS's for all our products may be requested thru the website www.noracperoxides.com

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